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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BEYER WEAVER & THOMAS LLP			WONG, BLANCHE	
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2667

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Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary	Application No. 09/735,199	Applicant(s) JAYASENAN ET AL.	
	Examiner Blanche Wong	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 52 and 53 is/are allowed.
 6) ☒ Claim(s) 1,6-10,13-22,26-36,40-42 and 46-51 is/are rejected.
 7) ☒ Claim(s) 2-5,11,12,23-25,37-39 and 43-45 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 07 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 2, 2004 have been fully considered but they are not persuasive.

With regard to cl. 1,13,26,31,35,41,43,46,48,49 and 50, Applicants argued on p. 17, para. 7, of the Amendment, that " the method of Luciani does not realize at least some of the benefits and/or advantages of the present claimed invention as defined ..." and further explained, in general, the teachings of Luciani versus the disclosed invention. Nevertheless, Applicants failed to point out specifically from the claimed language of these independent claims what limitations that are not met by the Luciani reference. Although Applicants presented the benefits/advantages of the present invention, such benefits/advantages are not measures of the patentability of the claims in question. *Jones v. Hardy*, 727 F.2d 1524, 1530, 220 USPQ 1021, 1026 (Fed. Cir. 1984) ("treating the advantage as the invention disregards statutory requirement that the invention be viewed as a whole' "). Furthermore, some of the discussed benefits/advantages as argued are ^{not} reflected as limitations in the above independent claims. As such, the rejection of these claims based on the Luciani reference as set forth in the previous office action is repeated below.

With regard to cl. 2-5, Applicants' arguments regarding these claims are persuasive. As such, the rejection of these claims based on the Luciani reference is hereby withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1,6-10,13-22,26-36,40-42,46-51** are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Luciani (U.S. Pat No. 6,331,984).

With regard to claims 1 and 51, Luciani discloses a method for implementing redundancy of stateful NAT information (current state of NAT translation table entries, col. 7, ln. 11) in at least one network device of a data network, the method comprising:

receiving, at a first network device ("client" border router, col. 6, ln. 46), a first packet (CSA messages), said first packet including a header portion comprising address information (local and global IP address in of a CSA message, Fig. 2) relating to a source device ("server" border router, col. 6, ln. 44-45) and a destination device associated with the first packet;

generating a first NAT entry (each line of a NAT translation table is an entry, Fig. 2) relating to the source device (local IP address, Fig. 2) of the first packet, wherein the source device is associated with a globally unique network address (global IP address, Fig. 2);

storing the first NAT entry in a first NAT data structure (a NAT translation table) residing at the first network device (routers);

generating a first NAT transaction message (CSA messages) which includes information relating to updates or modifications (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) performed on the first NAT data structure; and

transmitting the first NAT transaction message to at least one other network device (router 130 sends CSA messages to router 140, and router 140 likewise sends CSA messages to router 130) to thereby cause the at least one other network device to update (in order to synchronize NAT translation table, col. 6, ln. 46-50) a respective NAT data structure associated with the at least one other network device using information from said first NAT transaction message,

as recited in claim 1.

With regard to claim 6, Luciani further discloses a NAT transaction message (CSA messages) comprising information relating to:

an identifier of the at least one other network device; and

instructions 360 (protocol ID, col. 7, ln. 33-36) for causing the at least one other network device to modify (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a

change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) its respective NAT data structure (a NAT translation table) to include a NAT entry (each line of a NAT translation table is an entry, Fig. 2) comprising information that is substantially identical to the information contained in the first NAT entry;

as recited in claim 6.

With regard to claim 7, Luciani further discloses the first network device is a router 130,140 (Fig. 1), as recited in claim 7.

With regard to claim 8, Luciani further discloses

receiving said first NAT transaction message (CSA messages) at the at least one other network device (router 140 receives CSA messages from router 130, col. 6, ln. 46-47); and

modifying (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) a second NAT data structure (a NAT translation table in router 140) residing on the at least one other network device in accordance with instructions 360 (protocol ID in CSA messages, col. 7, ln. 33-36) provided in said first NAT transaction message (CSA messages), as recited in claim 8.

With regard to claim 9, Luciani further discloses

modifying includes creating a NAT entry in the second data structure comprising information that is substantially identical to the information contained in said first NAT entry (It is inherent in synchronization that first and second data structures are modified to be the same.), as recited in claim 9.

With regard to claim 10, Luciani further discloses the first network device is configured as a primary ("server", col. 6, ln. 44) traffic handling device of a primary-backup redundancy group, and wherein the at least one other network device is configured as a backup ("client", col. 6, ln. 46) traffic handling device of the primary-backup redundancy group, as recited in claim 10.

With regard to claims 13, 46 and 49, Luciani discloses a method for synchronizing NAT information stored on different network devices that have been configured to implement a NAT protocol, each of said network devices including a respective NAT data structure configured to store said NAT information, the method comprising:

creating in a first NAT data structure (a NAT translation table of router 130) of a first network device (router 130, Fig. 1), a first NAT entry (each line of a NAT translation table is an entry, Fig. 2) relating to a network node 210 (local IP address, Fig. 2) engaged in a communication session, said first NAT entry including information relating to a local network address 210 (local IP address, Fig. 2) of the network node and a

dynamically assigned global network address 220 (global IP address) of the network node;

generating a first NAT transaction message (CSA messages) which includes information relating to updates or modifications (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) performed on the first NAT data structure; and

transmitting the first NAT transaction message to at least one other network device (router 130 sends CSA messages to router 140, and router 140 likewise sends CSA messages to router 130) to thereby cause the at least one other network device to update (in order to synchronize NAT translation table, col. 6, ln. 46-50) a respective NAT data structure associated with the at least one other network device using information from said first NAT transaction message;

as recited in claim 13.

With regard to claim 14, Luciani further discloses the first NAT entry (each line of a NAT translation table is an entry, Fig. 2) includes a NAT ID field 210 (local IP address in Fig. 2) relating to an identity of a specific network device which is responsible for controlling modification of the first NAT entry, as recited in claim 14.

With regard to claim 15, Luciani further discloses a NAT transaction message comprising information relating to:

an identifier of the at least one other network device; and

instructions 360 (protocol ID, col. 7, ln. 33-36) for causing the at least one other network device to modify (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) its respective NAT data structure (a NAT translation table) by creating a second NAT entry (each line of a NAT translation table is an entry, Fig. 2) comprising information that is substantially identical to the information contained in the first NAT entry;

as recited in claim 15.

With regard to claim 16, Luciani further discloses the second NAT entry includes a corresponding NAT ID field 210 (local IP address in Fig. 2) which specifies an identity of the first network device (It is inherent in synchronization that first and second data structures and entries are corresponding), as recited in claim 16.

With regard to claim 17, Luciani further discloses

receiving said first NAT transaction message (CSA messages) at the at least one other network device (router 140 receives CSA messages from router 130, col. 6, ln. 46-47); and

modifying (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) a second NAT data structure (a NAT translation table in router 140) residing on the at least one other network device in accordance with instructions 360 (protocol ID in CSA messages, col. 7, ln. 33-36) provided in said first NAT transaction message (CSA messages), as recited in claim 17.

With regard to claim 18, Luciani further discloses

modifying includes creating a NAT entry in the second data structure comprising information that is substantially identical to the information contained in said first NAT entry (It is inherent in synchronization that first and second data structures are modified to be the same.), as recited in claim 18.

With regard to claim 19, Luciani further discloses

receiving said first NAT transaction message (CSA messages) at the at least one other network device (router 140 receives CSA messages from router 130, col. 6, ln. 46-47); and

modifying (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) using information from said first NAT

transaction message, a second NAT data structure residing on the at least one other network device by creating a second NAT entry in the second data structure, said second NAT entry comprising information that is substantially identical to the information included in said first NAT entry (It is inherent in synchronization that first and second data structure and entries are modified to be the same), as recited in claim 19.

With regard to claim 20, Luciani further discloses consulting a NAT ID field 210 (local IP address in Fig. 2) corresponding to a particular NAT entry (each line of a NAT translation table is an entry, Fig. 2) in the second NAT data structure (a NAT translation table) to determine whether modification of the particular NAT entry may be performed, as recited in claim 20.

With regard to claim 21, Luciani further discloses allowing the at least one other network device to modify (the NAT translation tables need to be synchronized, col. 5, ln. 51-52) (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54; Therefore, it is inherent that there will be modification in order to synchronize.) the particular NAT entry in response to a determination that the NAT ID field of the particular NAT entry corresponds to said at least one other network device, as recited in claim 21.

With regard to claim 22, Luciani further discloses preventing (It is inherent that the modification will not corrupt the NAT translation during synchronization.) the at least one other network device from modifying the particular NAT entry in response to a determination that the NAT ID field of the particular NAT entry does not correspond to said at least one other network device, as recited in claim 22.

With regard to claims 26 and 47, Luciani discloses a method for synchronizing NAT information stored on different network devices that have been configured to implement a NAT protocol, each of said network devices including a respective NAT data structure configured to store said NAT information, said NAT information including at least one NAT entry relating to a network node engaged in a communication session with at least one other network node, the method comprising:

modifying the a first (first line of a NAT translation table is an entry, Fig. 2) in a first NAT data structure (a NAT translation table of router 130) of a first NAT network device (router 130, Fig. 1);

generating a first NAT transaction message (CSA messages) which includes information relating the modifications (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) performed on the first NAT data structure; and

transmitting the first NAT transaction message to at least one other network device (router 130 sends CSA messages to router 140, and router 140 likewise sends CSA messages to router 130) to thereby cause the at least one other network device to modify (in order to synchronize NAT translation table, col. 6, ln. 46-50) a respective NAT data structure associated with the at least one other network device using information from said first NAT transaction message;

as recited in claim 26.

With regard to claim 27, Luciani further discloses a NAT transaction message that includes information relating to an addition of a new NAT entry to the first NAT data structure (it is inherent that synchronization of NAT translation table can include addition of a new NAT entry), as recited in claim 27.

With regard to claim 28, Luciani further discloses a NAT transaction message that includes information relating to a deletion of a NAT entry from the first NAT data structure (it is inherent that synchronization of NAT translation table can include deletion of a NAT entry), as recited in claim 28.

With regard to claim 29, Luciani further discloses a NAT transaction message that includes information relating to a modification of an existing NAT entry in the first NAT data structure (it is inherent that synchronization of NAT translation table can include modification of an existing NAT entry), as recited in claim 29.

With regard to claim 30, Luciani further discloses a computer readable medium and computer code, col. 4, ln. 63-col. 5, ln. 5.

With regard to claims 31, 48 and 50, Luciani discloses a method for synchronizing NAT information stored on different network devices (routers 130,140 in domain D and router 150 in domain C, both in Fig. 1) that have been configured to implement a NAT translation protocol (NAT software, col. 2, ln. 61 and col. 3, ln. 13-14), each of said network devices including a respective NAT data structure (associated data structure, col. 3, ln. 14) configured to store NAT information (NAT translation table), the method comprising:

receiving, at a first network device, a first network device (router 130 in domain D), a first NAT transaction message (a "server" border router sends CSA messages, col. 6, ln. 44; the SCAP is a generic flooding protocol that provides for synchronizing the contents of separate caches maintained among multiple distributed server entities in a server group so that the servers actively mirror state information, col. 5, ln. 61-65) which includes updated NAT information (SCSP may be used by NAT to ensure accurate, up to date mapping, col. 5, ln. 67-col. 6, ln. 1) generated by a second network device (router 140 in domain D)(router 140 likewise sends CSA messages to router 130, col. 6, ln. 48-50), the updated NAT information including information relating to modifications (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT

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translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) to be performed on NAT information stored in a first NAT data structure on the first network device; and

modifying (The synchronization may occur immediately upon a router updating its own NAT translation table, col. 6, ln. 55-56) the first NAT data structure using information from said first NAT transaction message to thereby achieve synchronization of NAT information stored on the first and second network devices (Additionally, each border router must be aware of the other common border routers for a given router domain, col. 6, ln. 29-30);

as recited in claim 31.

With regard to claim 32, Luciani further discloses a NAT transaction message includes instructions to add a new NAT entry to the first NAT data structure (it is inherent that synchronization of NAT translation table can include addition of a new NAT entry), as recited in claim 32.

With regard to claim 33, Luciani further discloses a NAT transaction message includes instructions to delete a specific NAT entry stored in the first NAT data structure (it is inherent that synchronization of NAT translation table can include deletion of a NAT entry), as recited in claim 33.

With regard to claim 34, Luciani further discloses a NAT transaction message includes instructions to modify an existing NAT entry in the first NAT data structure (it is inherent that synchronization of NAT translation table can include modification of an existing NAT entry), as recited in claim 34.

With regard to claims 35, 41 and 42, Luciani discloses a network device (routers 130,140, Fig. 1) configured to implement redundancy of stateful NAT information (current state of NAT translation table entries, col. 7, ln. 11) in a data network, the network device comprising:

at least one processor (it is inherent where there are computer program product and code, or software, there is some processor to execute the computer program product, code, software);

at least one interface (routers connected to LAN 110,120,170 in Fig. 7) configured or designed to provide a communication link to at least one other network device in the data network; and

memory, col. 4, ln. 63-col. 5, ln. 5;

said at least one process (synchronization) being configured to store in said memory a plurality of data structures (NAT translation tables), including:

a first NAT data structure configured to store information relating to address translations corresponding to selected network nodes in the network (Fig. 2);
and

a NAT transaction data structure configured to store transactional information relating to updates or modifications performed on the first NAT data structure (a NAT translation table in Fig. 2 and a CSA message in Fig. 3);

said network device being configured to transmit (router 130 sends CSA messages to router 140, and router 140 likewise sends CSA messages to router 130, col. 6, ln. 43-61) at least a portion (partial or all, col. 6, ln. 16) of said NAT transactional information to said at least one other network device to thereby cause the at least one other NAT network device to modify (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) a respective NAT data structure associated with the at least one other NAT network device using the NAT transaction information, as recited in claim 35

With regard to claims 36, 41 and 42, Luciani discloses a network device wherein the network device is further configured or designed to receive (router 140 receives CSA messages to router 130, and router 130 likewise receives CSA messages to router 140, col. 6, ln. 43-61) NAT transactional information from said at least one other device, said received NAT transactional information including information relating to updates or modifications performed on said respective NAT data structure associated with the at least one other network device; and

wherein the network device is further configured or designed to update or modify (The CSA messages may be sent in association with any number of events, such as when a router boots, reboots, or when the router detects a change/updates its own NAT translation table, to synchronize NAT translation tables with common border routers, col. 6, ln. 50-54) said first NAT data structure using data from said received NAT transactional information to thereby achieve redundancy of NAT information stored on the first network device and the at least one other network device.

With regard to claim 40, Luciani further discloses a network device (routers such as 130,140) that is configured as a traffic handling device and further comprises a routing table (a NAT translation table Fig. 2 is maintained in a border router, col. 4, ln. 16-17).

With regard to claim 48, Luciani discloses software product stored on a machine-readable medium, col. 4, ln. 63-col. 5, ln. 5.

With regard to claim 50, Luciani discloses stateful NAT information, col. 7, ln. 11.

Allowable Subject Matter

4. **Claims 52 and 53** are allowed.
5. **Claims 2-5,11-12, 23-25,37-39,43-45** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

With regard to cl. 52, the prior art of record fails to anticipate or make obvious "wherein the first network device is configured as an active traffic handling device of an active-standby redundancy group, and wherein the at least one other network device is configured as a standby traffic handling device of the active-standby redundancy group."

With regard to cl. 53, the prior art of record fails to anticipate or make obvious "wherein the first network device is configured as an first peer traffic handling device of a peer-peer redundancy group, and wherein the at least one other network device is configured as a second peer traffic handling device of the peer-peer redundancy group."


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW, July 13, 2005

BW


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7/20/05